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INTRODUCTION

This volume contains four appendices to the final report, *The Cost-Effectiveness of the Income and Eligibility Verification System in Arizona and Michigan*. Appendix A describes in detail the IEVS process in the two demonstration states. Appendix B contains the data collection forms developed by the two states for use during the demonstration. Caseworkers used these forms to record the time they spent conducting follow ups on IEVS matches. Appendix C describes the methodology and data used to estimate savings resulting from the IEVS process. Appendix D provides the same information for costs incurred during the IEVS process.

APPENDIX A

THE IEVS PROCESS IN ARIZONA AND MICHIGAN

This appendix describes in detail the IEVS process in the two demonstration states, Michigan and Arizona. The discussion of the process in each state is organized into three sections: (1) matching, (2) targeting, and (3) follow up.

A. ARIZONA

The Food Stamp and AFDC programs in Arizona are fully integrated. Both programs are administered by the Family Assistance Administration (FAA) within the Department of Economic Security (DES). The administration of the Medicaid program is the responsibility of the Arizona Health Care Cost Containment System (AHCCCS) Administration, but Medicaid cases that are also Food Stamp Program (FSP) or AFDC cases are administered by the FAA. Caseworkers are not specialized by program--most caseworkers work with cases in all three programs.¹ The IEVS procedures used in Arizona are summarized in Table A.1.

1. Matching

Arizona has conducted matches with all six IEVS-mandated databases. However, prior to our demonstration, Arizona had discontinued its SWICA quarterly tape match and was conducting only on-line matches with the SWICA database. While Arizona was conducting matches with the BEER, and IRS databases prior to the demonstration, no matches from these databases were followed up. The BEER and IRS matches were not followed up because Arizona believes they are not cost-effective. Arizona also conducts a match with Numident and a match with the state's Department of Motor Vehicles.

During our demonstration, Arizona reinstated the quarterly SWICA recipient match and followed up on matches from the BEER and IRS databases. The client database in Arizona includes applicants, recipients, and persons who do not receive benefits but who reside in the households of

¹Caseworkers who are not fully trained may specialize in one program.

TABLE A.1

SUMMARY OF IEVS PROCEDURES IN ARIZONA

Match	Match Took Place Prior to Demo.?	Frequency of Match	Which Clients Are Matched?	Process	Targeting?	Form in Which Information is Sent to Caseworkers
SWICA On-line	Yes	N/A	Applicants, clients at recertification, and clients who report any changes in circumstances	Direct on-line access	No	Print of screen (on-line access)
Tape	No	Quarterly	All clients	Tape match at FAA	N/A	Hard-copy report
UI On-line	Yes	N/A	Applicants, clients at recertification, and clients who report any changes in circumstances	Direct on-line access	No	Print of screen (on-line access)
Tape	Yes	Monthly	All clients	Tape match at FAA	Yes	On-line alert
BENDEX	Yes	Monthly	New clients and any clients for whom there is new information on the system; SSA sends information on clients whose situation has changed	Tape match at SSA (response tape returned to FAA via AHCCCS)	Yes	On-line alert ^a
BEER	Yes	Monthly	New clients and any clients for whom there is new information on the system; SSA sends information on old clients whose situation has changed	Tape match at SSA (response tape returned to FAA via AHCCCS)	No matches followed up prior to demonstration	Hard-copy report ^b
SDX	Yes	Monthly	All clients	Receive a SSA tape, via AHCCCS. Tape match occurs at FAA.	Yes	On-line alert
IRS All clients	Yes	Annually	All clients that are active	Tape match at IRS	No matches followed up prior to demonstration	Hard-copy report ^b
New clients	Yes	Monthly	New clients	Tape match at IRS	No matches followed up prior to demonstration	Hard-copy report ^b

N/A = not applicable.

^aWhen there is a discrepancy between client-reported information and on-line data, the caseworker sends a TPQY card to the local SSA office for hard-copy verification^bDuring demonstration when hits were followed up.

applicants or recipients. Unless otherwise stated, Arizona's FAA requests information from the external database on *all* persons on the client database.

a. SWICA

Employers in Arizona are required to report their employees' quarterly earnings to the Administration of Unemployment Insurance, which is a division within the Arizona DES. The SWICA database, known in Arizona as the "base wage" database, contains information on the SSN of each employee, the employee's quarterly earnings, and the employers' names and addresses.

Two types of matches can be conducted with the SWICA database, an on-line match and a tape match. As the SWICA database is in effect "in-house" at the DES, staff can access the database directly via on-line commands from their computer terminals. When a client applies for benefits, is recertified, or reports a change in circumstances (such as a change in address, household size, or earnings), a clerical worker accesses the database and prints out a report from the computer screen of any matched information for the SSN of each person in the household. This report is placed in

[REDACTED]

[REDACTED]

the client's casefile. The caseworker reviews the report before or during the interview with the client.

The quarterly SWICA recipient tape match takes place at the FAA. The SWICA data are matched against the entire client database.

b. UI

The Administration of Unemployment Insurance in Arizona maintains a database that contains both information on the dollar value of UI benefits paid by Arizona during the previous month and an indicator, but no dollar amount, of whether UI benefits were paid by any other states. There is an on-line match and a tape match with the UI database. The on-line match is conducted at

each month after the UI data have been updated. This match usually occurs within the first five days of the month.

c. BENDEX

As in all states, the match with the BENDEX database in Arizona occurs at the SSA. Arizona sends a tape, known as the "BENDEX request tape," to the SSA around the third week of each month. The request tape contains the SSNs of all new clients that have not been matched with BENDEX and the SSNs of any clients for whom any information on the client database has changed since the SSN was last sent to the SSA.

The SSA sends two tapes back to Arizona. The first, which arrives around the end of the month, consists largely of Title II benefit information for the SSNs contained on the BENDEX request tape. The second, which arrives around the middle of the month, contains any new information available for clients that were sent on previous BENDEX request tapes and were kept on the orbit file at the SSA. Depending on when in the month new data on clients on the orbit file are received by SSA, information on clients sent on previous request tapes may be included on the first tape containing matched information on new clients or on the orbit-file tape. Once Arizona has received both tapes, it combines the data from each tape and matches the resulting database against its client database. In addition, if the caseworker suspects that there is unreported Title II benefit income, he or she can request a match with BENDEX by sending a TPQY card to an SSA office.

d. BEER

The BEER match is coordinated with the BENDEX match. The SSA matches the SSNs on the BENDEX request tape with its BEER database in addition to its BENDEX database. The FAA receives two tapes a month containing BEER information--one consisting largely of matched information on new clients and the other containing new matched information from the orbit file on

clients who were previously sent to the SSA. The two BEER tapes arrive at about the same time as the BENDEX tapes, and they are processed in the same way.

e. SDX

At the end of each month, the AHCCCS Administration receives from the SSA a tape--the Treasury tape--which contains information on all persons in Arizona who have ever received SSI, currently receive SSI, or have applied for SSI. In addition, the AHCCCS Administration has direct access to SDX data via the SSA's File Transfer Management System. Hence, the SSA also electronically sends the AHCCCS Administration updated information on SSI recipients three times a week. The AHCCCS Administration appends these data to the Treasury tape and sends the tape to the FAA around the middle of each month. At the FAA, the tape is matched against the entire client database. A match with the SDX database can also be initiated by sending a TPQY card to the SSA.

f. IRS

Once a year, Arizona sends a tape to the IRS containing the SSNs of all clients on the client database who are active for either food stamps or AFDC. After a month or two, Arizona receives a tape back from the IRS with the matched information.

In addition, Arizona sends a tape each month to the IRS containing the SSNs of all new clients (that is, those clients who have not been previously matched with the IRS database). About one month later, Arizona receives a tape from the IRS that contains information on any matches with the IRS database.

2. Targeting

In the past, Arizona targeted all six IEVS-mandated matches. However, prior to the demonstration, Arizona was targeting only its UI tape match and SDX match. The targeting

strategies, described below, are implemented at the state office. There is no difference in the targeting strategies by welfare program.

a. SWICA

All information from the on-line SWICA match is followed up--no targeting strategy is used. Prior to the demonstration, Arizona did not conduct the SWICA tape match.

b. UI

All information from the UI on-line match is followed up--no targeting strategy is used. The targeting strategy for the UI tape match is to follow up a match only if both of the following rules are satisfied:

1. The person's income is included in determining benefits for the case in the reference month (the previous month).
2. There is a discrepancy between the UI benefit reported on the UI database and the UI benefit reported on the client database in the same month. The size of the discrepancy depends on whether the UI database reports benefits paid by Arizona or by other states.
 - If the person received UI benefits from Arizona but not from any other state, all discrepancies are followed up.
 - If the person received UI benefits in another state but not in Arizona, all persons not reporting UI income on the client database are followed up.
 - If the person received UI benefits in Arizona and in another state, all persons who reported UI benefits on the client database that are equal to or less than the UI benefits reported on the UI database are followed up.

The first rule exempts caseworkers from following up persons whose incomes are irrelevant in determining eligibility and benefits. The second rule exempts caseworkers from following up persons whose reported UI income is consistent with the UI benefits reported on the UI database. As the UI database does not provide a dollar amount for UI benefits paid outside of Arizona, if the UI

database reports the presence of out-of-state UI benefits, the caseworker can only detect a discrepancy in reported and actual benefits if the client does not report out-of-state UI benefits.

c. BENDEX

The targeting strategy for the BENDEX match is that caseworkers follow up on a match only if the discrepancy between the benefits reported by the client and benefits reported on SDX over the same reference month is \$1 or more. This exempts caseworkers from following up on persons who correctly report their Title II benefits or who report them incorrectly by a negligible amount.

d. BEER

Prior to the demonstration, no matches from the BEER database were followed up because the state did not believe they were cost-effective.

e. SDX

The targeting strategy for the SDX match is that caseworkers follow up on a match only if the discrepancy between the benefits reported by the client and benefits reported on SDX over the same reference month is \$1 or more. This exempts caseworkers from following up on persons who correctly report their SSI income or who report it incorrectly by a negligible amount.

f. IRS

Prior to the demonstration, no matches from the IRS database were followed up because the state did not believe they were cost-effective.

3. Follow Up

This section explains the typical follow-up procedures in Arizona. The specific procedures do, however, vary across local offices.

The manner in which caseworkers are notified of a hit varies by database. Caseworkers are notified of a hit from the UI, BENDEX, and SDX matches by an on-line message, or "alert," at their

computer terminal. They are notified of a hit from the SWICA, BEER, and IRS matches by a hard-copy report. The SWICA reports are sent from the state office to the local offices where they are distributed to caseworkers. For security reasons, BEER and IRS reports are locked in cabinets. Caseworkers must sign for a report when it is removed from the cabinet and must return the report to the cabinet within a few hours.

While the IEVS regulations require that caseworkers follow up a hit within 45 days, caseworkers in Arizona are requested to complete the follow-up procedures in less time. The time allowed to complete a follow up varies by database. The SWICA hits must be followed up within 10 calendar days after the worker receives the report; the UI, BENDEX, and SDX hits within 14 days; and the BEER and IRS hits within 30 days. Discussions with some field staff in Arizona suggest that these time limits are not always met, and in some instances, a hit may not be followed up at all.

After receiving an on-line alert or hard-copy report, the caseworker first obtains the casefile and then checks that the match is valid, that is, that the person on the external database is actually the person in the casefile. The match may not be valid if, for example, the client's SSN is incorrect. If the match is valid, the next step is to check whether the income data on the external database is consistent with the income data in the casefile. This is especially important if the targeting algorithm does not target on the basis of a discrepancy in income. This step may require the caseworker to sum the client-reported income over a quarter or a year so that it can be compared with the income reported on the external database. If there is a discrepancy between the two reported incomes, the caseworker may be required to verify the external data. Data from the UI, BENDEX, and SDX databases need not be further verified, since the data were obtained from the source of the benefits--the state's Unemployment Commission or the SSA. However, in some instances, if the client disagrees with the information provided on the BENDEX or SDX databases, the caseworker will request a match by sending a third-party query (TPQY) card to the SSA. The SWICA, BEER, and IRS data must be verified by contacting a third party.

For the SWICA and BEER matches, verification involves contacting the client's employer; for the IRS match, it involves contacting financial institutions, such as banks or, if the client received gambling winnings, casinos. To obtain information from these sources, the caseworker first asks the client to sign an "authority-to-release" letter that gives the third party permission to provide the information. This letter is then sent with a "request-for-information" letter to the third party. The computer system in Arizona is designed such that a caseworker can enter the relevant information into a computer terminal, and the request-for-information letter will automatically be written and printed out.

If the caseworker discovers that the client is currently receiving an incorrect benefit payment, he or she will recompute the new benefit amount using the new income information. However, if the caseworker suspects fraud or discovers an overpayment, he or she will complete a *referral form*, which is given to an *overpayment writer*. An overpayment writer is a caseworker who specializes in calculating overpayments and establishing claims. It may take a couple of weeks for the overpayment writer to calculate the amount of the overpayment. Once the overpayment writer is finished with the case, it is sent to the Office of Accounts Receivable and Collections (OARC), which investigates the cause of the overpayment (fraud, client error, or agency error), proceeds with any legal action, and arranges for the collection of the claim.

B. MICHIGAN

In Michigan, the Department of Social Services (DSS) administers the Food Stamp, AFDC, and Medicaid programs. The three programs are fully integrated--caseworkers determine eligibility and benefits for all three programs. The IEVS procedures in Michigan are summarized in Table A.2.

1. Matching

Michigan conducts matches with all six IEVS-mandated databases. It also conducts an on-line match with a database maintained by the Office of the Secretary of State containing information on

TABLE A.2
SUMMARY OF IEVS PROCEDURES IN MICHIGAN

Match	Frequency of Match	Which Clients are Matched?	Process	Targeting?	Form in Which Information is Sent to the Caseworkers
SWICA					
Applicants	Twice weekly	New applicants who have not been active within the past 105 days	Tape match at MESC	No	Hard-copy report
Recipients	Quarterly	All recipients who have received benefits for the past three months	Tape match at MESC	Yes	Hard-copy report
UI					
Applicants	Twice weekly	New applicants who have not been active within the past 105 days	Tape match at MESC	Yes	Hard-copy report
Recipients	Monthly	Clients who report receiving some unearned income, clients who have lost employment within the past three months, and clients who applied for welfare benefits less than three months previously	Tape match at MESC	Yes	Hard-copy report
BENDEX					
	Monthly	New recipients and one-third of the caseload SSA sends information on clients whose situations have changed	Tape match at SSA	Yes	Hard-copy report
BEER					
	Monthly	New recipients and one-third of the caseload SSA sends information on clients whose situations have changed	Tape match at SSA	No matches followed up	N/A ^a
	Annually	SSA sends information on all Michigan clients on the orbit file	Receive tapes from SSA	Yes	N/A ^a
SDX					
	Weekly	All applicants and recipients	Receive tapes from SSA	Yes	Hard-copy report
IRS					
	Monthly	Applicants, and recipients that are due for redetermination within 3 months	Tape match at IRS	Yes	N/A ^a

^aNotification is sent first to the client. Caseworkers receive a printout listing those clients who were notified.

N/A = not applicable.

the ownership of assets (such as cars and boats), and it conducts a nonautomated match with worker's compensation benefits information.

Before a case is found to be eligible for benefits, only the SSN of the person who applied for benefits is entered into the client database. That is, the applicant matches in Michigan do not include the SSNs of persons who reside in the same household as the applicant. Thus, Michigan requests information on only one person in each household for the applicant matches. For recipient cases, information is requested only on persons who are eligible to receive benefits.

a. SWICA

Employers are required to report the quarterly earnings of employees who are covered by Unemployment Insurance to the Michigan Economic Security Commission (MESC). Michigan performs an applicant match and a recipient match with these SWICA data. Michigan's DSS does not have direct on-line access to the SWICA database, so both matches involve sending a tape to the MESC. With the exception of New York, Michigan is the only state required to pay for each match with the SWICA database.

Applicant SWICA Match. A tape of the SSNs of "new" applicants is sent about twice a week to the MESC. A "new" applicant is defined as an applicant who has not previously been active in the previous 105 days. As a client is defined as active when they apply for benefits or receive benefits, this screens out applicants who have applied for benefits within the last three months. The rationale for this screen is that as the SWICA database is updated only on a quarterly basis, it will provide identical information on a person for three consecutive months. This screening rule could, however, screen out useful information on a person who applies more than once in a three-month period if these applications were made in two different quarters.

The MESC conducts the match and returns the matched information on a tape within two or three weeks. Within a few days of receiving the tape, DSS produces reports of the hits and sends them to the caseworkers.

Recipient SWICA Match. A tape of the SSNs of recipients is sent to the MESC around the second week of each quarter. This tape contains the SSNs of all recipients who have received benefits continually in the past three months. This screening rule excludes recipients who have applied for benefits within the past three months. The rationale for this rule is that it excludes from follow up those persons who have already been subject to an applicant match within the same quarter. The MESC conducts the match and returns a tape of the matched information within about two or three weeks. No cases in our research sample were included in the SWICA recipient match.

b. UI

The MESC also collects information on UI benefits. Although DSS must pay for the SWICA match, it does not pay for the UI match. An applicant match and a recipient match are conducted with the UI database.

The tape of all "new" applicant SSNs sent twice a week to the MESC to be matched to the SWICA database is also matched to the UI database. The MESC conducts the match and returns the matched information within about a week. At the beginning of each month, DSS also sends to the MESC a tape containing the SSNs of all clients who report receiving some form of unearned income, who have lost employment within the past three months, or who have applied for welfare benefits less than three months previously.² The rationale for including persons who report receiving some unearned income is that the client database does not include a field that contains UI benefit information; hence any UI benefit data is entered as unearned income.

c. BENDEX

Michigan sends a BENDEX request tape to the SSA during about the third week of the month. The request tape contains SSNs of all new recipients who have become active that month and have

²As all clients are not sent to be matched, this is a form of screening. However, this form of screening for the UI match is explicitly permitted by the IEVS regulations.

not already been matched to the BENDEX database. Michigan does not currently include applicants on the BENDEX request tape. The BENDEX request tape also contains the SSNs of about one-third of the clients on the client database (chosen by the digits in the case number).³

The SSA sends two tapes back to Michigan. Both arrive about the middle of the month. The first tape consists primarily of information on the clients included on the request tape. The second tape contains any new information on clients who were sent previously and were kept by the SSA on its orbit file. Within two or three days of receiving the tapes, Michigan produces reports of hits to be sent to the caseworkers. If, during the application process, a caseworker suspects that a client is receiving unreported Title II (or SSI) benefits, he or she can send a TPQY card to the SSA.

d. BEER

The BEER match in Michigan is closely coordinated with the BENDEX match. Each month, the SSA sends Michigan earnings information from the BEER file on clients included on the BENDEX request tape. The SSA also sends a second tape with any new earnings information for clients who are on the orbit file. In addition, each year in early August, the SSA sends to Michigan tapes that contain earnings information for *all* SSNs sent by Michigan that are on the SSA orbit file. All BEER tapes received during the year are processed at one time. No BEER match was included in the demonstration.

e. SDX

At the end of each month, Michigan's DSS receives a tape--the Treasury tape--containing information on all persons in Michigan who have ever applied for SSI, currently receive SSI, or have received SSI in the past. Because Michigan does not have direct access to the SSA File Transfer Management System, it does not electronically receive updated information on SSI recipients three

³As SSA sends a tape from the orbit file containing data on any clients whose benefits have changed, it is redundant to send SSNs of clients who have previously been sent to SSA. However, this procedure began before SSA sent data from the orbit file and has not yet been changed.

times a week. Michigan instead receives a tape from the SSA each week that contains any new information on persons on the SDX database.

f. IRS

Around the second week of each month, Michigan sends the IRS a tape containing SSNs of all current applicants and SSNs of recipients who are due for redetermination within about three months. About two or three weeks later, the IRS returns to Michigan a tape with the matched information.

2. Targeting

Michigan conducts some form of targeting on all of its matches except the SWICA applicant match. The targeting strategies are implemented at the state office. There is no difference in the targeting strategies by welfare program. The following explains Michigan's targeting strategies for each database.

a. SWICA

No targeting strategy is applied to the applicant match with the SWICA database--all matches are designated for follow up. However, discussions with agency staff in Michigan suggest that caseworkers do not currently have time to follow up on a substantial proportion of the matches.

A targeting strategy is applied to the quarterly recipient match with the SWICA database. A match is followed up only if both of the following rules are satisfied:

1. The client is currently active for a program administered by DSS (food stamps, AFDC, Medicaid, and General Assistance)⁴

⁴A client is considered active if both of the following are true: (1) the person's case has been determined to be eligible for benefits in the current month, or eligibility for the case has been suspended for the current month but is expected to resume in the next month, or eligibility has yet to be determined and (2) the person is in the program's filing unit (that is, the FSP household, the AFDC household, or the Medicaid household) or the person's income and resources are counted in determining benefits. In most cases, a person's income and resources are used to determine benefits (continued...)

2. The difference between the total quarterly earnings on the SWICA database and the total quarterly earnings reported on the client database over the same quarter is \$500 or more

The first rule exempts from follow up clients who have neither applying for nor receiving benefits currently. These clients are not followed up because they cannot lead to any change in current benefits or eligibility status and because it is difficult to recover overpayments from clients who are no longer active. The second rule exempts from follow up matches for which the discrepancy in earnings does not have a large impact on eligibility or benefits. Staff in Michigan set the threshold at \$500 because they felt that \$500 would (1) approximate the earned income disregards applied to many cases, (2) capture only those cases that had large reductions in benefits, and (3) reduce the number of hits sent to caseworkers (Ward and Smucker 1990).

b. UI

Michigan applies the same targeting strategy to its applicant and recipient matches with the UI database. A match is only followed up if both of the following rules are satisfied:

1. The client is currently active for a program administered by DSS
2. The UI database reports that the client has applied for UI benefits in the past 30 days, has received UI benefits in the past 60 days, or has returned to work within the past 90 days

The purpose of and rationale for the first rule are the same as for the SWICA targeting strategy for recipients. The second rule exempts from follow up those clients for which the receipt of UI benefits is unlikely to affect current benefits or eligibility. However, it does not exempt from follow up clients

⁴(...continued)

if, and only if, he or she is in the program's filing unit. However, there are exceptions. For example, a school child may be part of the FSP filing unit, but his or her income is not counted in determining benefits, and an illegal alien's income is counted in determining food stamp benefits, but he or she is not part of the FSP filing unit.

who have recently stopped receiving UI benefits because this may indicate that the client has found employment and has earned income.

c. BENDEX

The targeting strategy for the BENDEX match is to follow up on matches only if the following two rules are satisfied:

1. The client is currently active for a program administered by DSS
2. The client is currently receiving Title II benefits

The first rule exempts inactive clients from follow up. The second rule exempts from follow up clients who do not currently receive any Title II income.

d. BEER

The targeting strategy for the BEER match is to follow up matches only if the following three rules are satisfied:

1. The client is currently active for a program administered by DSS
2. The income sources is not in-state earnings or in-state UI income
3. The income source is greater than a tolerance threshold. The tolerance thresholds vary with the income source. For pension and self-employment income, the tolerance threshold is zero; that is, the match is followed up if the BEER database reports that the client received *any* income from these two sources.

The first rule exempts inactive clients from follow up. The rationale for the second rule is to reduce follow ups on duplicated information. More up-to-date and less aggregated income information about in-state earnings and UI income can be obtained from the SWICA database and the UI database, respectively. The third rule prevents caseworkers from following up on income that is too small to affect benefits or eligibility.

e. SDX

Matches are followed up by the caseworker only if both of the following two targeting rules are satisfied:

1. The client is currently active for a program administered by DSS
2. The client has applied for SSI, is currently receiving SSI benefits, has just had SSI benefits denied or terminated, or has had a change in address or living arrangement.

These targeting rules exempt from follow up any clients who received SSI benefits in the past,

but are no longer receiving benefits and for which the information subsequently cannot lead to a

change in current benefits or eligibility.

f. IRS

The targeting strategy for the IRS match prior to the demonstration was to follow up only if both of the following two targeting rules were satisfied:

1. The client is currently active in a program administered by DSS
2. The IRS reports levels of unearned income for the client that exceed specified thresholds

3. Follow Up

The follow-up procedures in Michigan vary by local office and by database. For example, in some offices certain caseworkers process applicant matches, and others process recipient matches; in other offices caseworkers process both applicant and recipient matches.

Caseworkers are notified of a hit from the SWICA, UI, BENDEX, and SDX matches by a hard-copy report from the state office. For a hit from the BEER or IRS matches, the state office sends a letter to the client notifying him or her that DSS has been notified of a source of income. The client is required to schedule an interview with the caseworker within a couple of weeks. If the client fails to do so, he or she is disqualified from the program and the case is closed. The caseworker receives a printout that lists those clients who have been sent a letter notifying them of the BEER or IRS information.

Caseworkers are requested to complete the follow up of all hits within the 45 days specified by the IEVS regulations. They begin by checking the information in the casefile. If verification is required, the caseworker sends a letter to a collateral contact. The BEER and IRS matches are not verified until after the client has given the caseworker the letter from the state office about the match.

Once the caseworker has verified the new income information, he or she recomputes eligibility and benefits and estimates the overpayment. If the caseworker determines that the application should be denied, a case closed, or current benefits changed, the new eligibility and benefit information is entered into the client database, the Client Information System (CIS). The caseworker or computer operator can input the information.

If the estimated amount of overpayment is less than \$200 or if fraud is not suspected because, for example, the agency itself made an error in benefit payments, the caseworker sends the client a letter about the overpayment. If the client does not dispute the overpayment, the caseworker enters the amount of the overpayment into a special system on the mainframe computer, the Automatic

Recoupment System (ARS). The ARS automatically calculates the recoupment, which is the amount by which the monthly benefit is reduced to recover the overpayment.

If the estimated amount of the overpayment is between \$200 and \$500 and fraud is suspected, the caseworker transfers the case materials to a caseworker specializing in overpayments, a *designated staff person* (DSP),⁵ who checks the amount of the overpayment and investigates whether there was fraud. If the investigation shows that fraud is a possibility, the DSP arranges for a hearing. It takes about a month for these procedures to be completed.

If the estimated amount of the overpayment is \$500 or more and fraud is suspected, the case is referred to the Office of the Inspector General (OIG). OIG conducts an investigation and arranges for any legal proceedings. If the case is referred to the OIG, it can take months or even years before the exact amount of the overpayment is established.

⁵In some offices where there is no DSP, the caseworker would perform the tasks of the DSP.

APPENDIX B
DATA COLLECTION FORMS

ARIZONA DEPARTMENT OF ECONOMIC SECURITY
Family Assistance Administration

IEVS DATA COLLECTION

DOCUMENT NO.	TYPE <input type="checkbox"/> IRS <input type="checkbox"/> BEER <input type="checkbox"/> BASE WAGE	SITE CODE	DATE OF REPORT
AZTECS NO.	CLIENT'S ID NO. (Client No. 1)	(Client No. 2)	(Client No. 3)
EI'S NAME		OP EI'S NAME	DATE COMPLETED

TASK	1ST TIME	2ND TIME	3RD TIME	4TH TIME	5TH TIME
1. Review case					
2. Client contact (Correspondence, telephone, in-person)					
3. Correspondence sent to collateral contact or 3rd party query					
4. Recompute eligibility and benefits					
5. Referral to OPU (FA-526)					
6. Completion of FA-529					
7. Other (Specify)					
ENTER TOTAL TIME SPENT (Round up to nearest 5 minutes)					

THERE WAS NO CHANGE TO CURRENT BENEFITS AS A RESULT OF THE ATTACHED REPORT.

INDICATE APPROPRIATE REASON CODE FOR EACH APPLICABLE PROGRAM:

<input type="checkbox"/> FS (A) Inactive case <input type="checkbox"/> AFDC (B) Recipient not active <input type="checkbox"/> MA (C) Already reported (D) Already budgeted (E) Case transferred to a non-target office	(F) Case transferred to a target office (G) Employer will not verify income (H) Employer reported wrong amount (I) Wrong Social Security Number (J) Excluded income	(K) Prior period, no effect on current benefits (L) Already denied (M) Other (Specify) _____
---	---	--

AS A RESULT OF THE ATTACHED REPORT, CURRENT BENEFITS WERE:

ONGOING

☐ Reduced to: FS \$ _____ AFDC \$ _____
Benefit amount prior to reduction:

FS \$ _____ AFDC \$ _____

☐ Closed (Enter closure reason code):

FS _____ AFDC _____ MA _____
Benefit amount prior to closure:

FS \$ _____ AFDC \$ _____

☐ Other (Specify): _____

RECERT/REVIEW

☐ Denied/closed (Enter denial/closure reason code):

FS _____ AFDC _____ MA _____

☐ Continued at lesser amount:

FS \$ _____ AFDC \$ _____

☐ Other (Specify): _____

THERE WAS AN OVERPAYMENT AS A RESULT OF THE ATTACHED REPORT.

OP amount ☐ FS \$ _____ ☐ AFDC \$ _____ ☐ Agency caused ☐ Client caused

Attachment(s)

Load #

Case Name and #

Recipient Name and #

Load #'s (if different from above) _____

RUN DATE MM DD YY

BATCH #

IEVS REPORT #, DATA COLLECTION

WHEN HANDLING CASE, CHECK OR RECORD TIME FOR EACH TASK.

TASK:	CASE HANDLED:	1st time	2nd time	3rd time	4th time	5th time	6th time	7th time	8th time	9th time	10th time
1. Review case											
2. Correspondence sent to client											
3. Correspondence sent to collateral contact or 3rd party query											
4. Client contact (phone or in person)											
5. 3rd party/collateral contact (phone or in person)											
6. Recompute eligibility and benefits											
7. CIS input											
8. Referral to DSP											
9. Referral to OIG											
10. Other (explain) _____											
TIME: Enter total time (Round up to nearest 5 minute increment) whenever case is handled											

THERE WAS NO CHANGE IN CURRENT BENEFITS AS A RESULT OF THIS REPORT. INSERT LETTER OF APPROPRIATE REASON IN SPACES TO THE LEFT.

<input type="checkbox"/> FS: no change because _____	(a) inactive case	(h) wrong SSN
<input type="checkbox"/> ADC: no change because _____	(b) recipient not active	(i) excluded income
<input type="checkbox"/> MA: no change because _____	(c) already reported	(j) prior period, no effect on current benefits
	(d) already budgeted	(k) already denied
	(e) case transferred to non-demo office	(l) other: (explain) _____
	(f) employer will not verify income	
	(g) employer reported wrong amounts	

AS A RESULT OF THIS REPORT, CURRENT BENEFITS WERE:

ONGOING: [Circle Program(s)]

☐ Closed: FS ADC MA

☐ Reduced: FS ADC MA (S-D)

☐ Increased: FS ADC MA

☐ Other: (explain) _____

Benefits Before: FS\$ _____ ADC\$ _____

Benefits After: FS\$ _____ ADC\$ _____

INTAKE: [Circle Program(s)]

☐ Denied: FS ADC MA

☐ Reduced at opening: FS ADC MA (S-D)

☐ Increased at opening: FS ADC MA

☐ Other: (explain) _____

Benefits Before: FS\$ _____ ADC\$ _____

Benefits After: FS\$ _____ ADC\$ _____

RECOUPMENT: ☐ Yes

O.I. amount: FS\$ _____ ADC\$ _____

RECOUPMENT: ☐ No

Date received by worker _____ (AP Worker)

Form completion date _____ (L.O. Coordinator)

APPENDIX C

SAVINGS RESULTING FROM THE IEVS PROCESS

This Appendix is a supplement to Section A of Chapter IV of Volume I of this report and provides details concerning the methodology and data used to calculate savings resulting from the IEVS process. These savings, discussed in the sections that follow, are of four types:

1. Avoided benefit payments
2. Avoided administrative costs
3. Recovered previous benefit overpayments
4. Other, unmeasured savings

A. AVOIDED BENEFIT PAYMENTS

We estimated avoided benefit payments from the product of (1) the error in the monthly benefit at the time the benefit is changed, benefits are denied, or the case is closed and (2) an estimate of the number of months the error would have persisted in the absence of IEVS. Since in most cases benefits are reduced and not increased, we refer to the error in monthly benefits as monthly benefit savings, and the period over which we expect the error would otherwise have gone undetected as the number of months savings persist.

1. Monthly Benefit Savings

For both the Food Stamp and AFDC programs, the monthly benefit savings is in most cases the difference between two amounts entered by caseworkers on the data collection forms: the monthly benefit that *would* have been paid in the absence of the IEVS process (the benefit prior to the follow up) and the monthly benefit that *will* be paid (the benefit after the follow up). However, in order to reduce the burden of data collection for caseworkers, we inferred some benefit amounts. Inference was also necessary in those instances where data were incomplete.

- In Arizona, if an IEVS follow up was conducted as part of the recertification process, caseworkers were not asked to specify what the benefit would have been in the absence of IEVS. Instead, they simply entered the actual benefit amount (the benefit that will be paid). We assumed the benefit that would have been paid

in the absence of IEVS was the benefit paid prior to recertification. This amount was obtained from the monthly case-record extracts. This affected three research-sample cases.

- In Michigan, if an IEVS follow up was completed before the case was certified, caseworkers did not specify what the benefit amount would have been in the absence of IEVS. We assumed the benefit that would have been paid in the absence of IEVS was the average food stamp and/or AFDC benefit paid to all households of the same size in our Michigan sample, as calculated from the monthly case-record extracts. This affected seven research-sample cases.
- In both states, caseworkers occasionally omitted benefit information. We obtained benefit information from the monthly case-record extracts to complete four data collection forms in Michigan and six data collection forms in Arizona.

2. Number of Months Savings Persist

Our benchmark estimates are based on the assumption that savings persist until the end of the certification period. However, we also estimated total savings under two alternative assumptions: (1) savings persist until the case would have closed in the absence of IEVS, and (2) savings from the SWICA applicant match in Michigan persist until the subsequent SWICA recipient match.

The number of months savings persist depends on when a benefit reduction or case closure takes effect. Staff in each state report that in almost all cases, action is taken in the month following that in which the redetermination was made. This is the month after the completion date entered on the data collection form. However, in one case in Michigan and five cases in Arizona, the caseworker explicitly stated on the form that the case was to be closed one or two months after the form was completed. This delay could have occurred either because the caseworker needed to give the client time to prove that the reported income was correct or because an earlier closure would have violated the regulatory requirement that clients be given 10 days notice of an adverse action.

Our benchmark estimates of savings from avoided benefit payments are based on the assumption that savings persist until the end of the certification period. For both states, the date of the next scheduled recertification was obtained from the monthly case-record extracts. In 10 cases in Michigan and 3 cases in Arizona, the date of the next recertification was missing. In these cases, we used the

average length of time to recertification for those cases in our sample with a change in current benefits or eligibility as a result of IEVS. In addition, on one data collection form in Arizona, the caseworker stated that the case would be closed for only one month. In this case, we assumed that the savings persist for one month.

B. AVOIDED ADMINISTRATIVE COSTS

To the extent that the costs of administering cases vary with the number of cases, case closures and benefit denials will yield savings over and above those from avoided benefit payments. It is extremely difficult to measure the cost of administering any one case. We have therefore estimated an average administrative cost savings per food stamp case closed and per AFDC case closed. Use of an average assumes that cases closed or denied benefits as a result of the IEVS process are no more or less costly to administer than are other cases.

Our measure of administrative cost savings includes the federal agencies' share of costs incurred in state operation of the programs, but omits federal expenditures at the regional and national levels. However, it is unlikely that this omission will seriously bias our estimates, as nearly all of these federal administrative costs are fixed and do not vary with the number of cases.

The sections that follow provides details of our approach to measuring food stamp and AFDC administrative cost savings.

1. Food Stamp Administrative Cost Savings

We estimated an average administrative cost savings per food stamp case closed by dividing the sum total of certain administrative costs (those we believe will vary with small changes in the caseload) by the total number of cases administered. Our calculation of FSP administrative cost savings is based on figures reported by the states to FCS on Form 269, the "Financial Status Report." We included in our estimate the costs of certification, issuance, automated data processing (ADP) operations, and a percentage of unspecified other costs. Omitted from our measure of savings

resulting from avoided administrative costs are those costs that are less likely to vary with the size of the caseload: costs associated with performance reporting, fair hearings, employment and training programs, and ADP development. Quality control procedures and fair hearings involve only a subset of cases and thus are unlikely to be affected by small decreases in the caseload. Similarly, employment and training programs serve only a limited number of food stamp recipients; thus, program enrollment should be relatively insensitive to change in caseload. While ADP development needs are to some extent a function of the size of the caseload, small changes in caseload size should have virtually no impact on system upgrade efforts. We also exclude from our measure of administrative cost savings administrative expenditures related to fraud control, since these costs may be incurred if the case is closed as a result of the IEVS process.

a. Arizona

Some of the costs Arizona reported to FCS in the fourth quarter reflect corrections to amounts reported in the first three quarters of the year. In these cases, the fourth quarter figures do not represent actual costs for the quarter. For these activities, we used the average quarterly cost for the year. We adjusted the costs of both ADP operations and ADP development.

- **Cost of ADP operations.** The state reported costs of \$1,666,730 for the quarter, noting that this amount reflected a correction to amounts reported in the three previous quarters. We took as our estimate of quarterly costs one-fourth of the \$4,683,234 annual costs, or \$1,170,809. This is \$495,921 less than the amount reported for the fourth quarter.
- **Cost of ADP development.** The state reported costs of *minus* \$445,287 for the quarter, again noting that this amount reflected a correction. We took as our estimate of quarterly costs one-fourth of the \$770,701 annual costs, or \$192,675. This is \$637,962 more than the amount reported for the fourth quarter.
- **Total cost.** We adjusted the total cost reported for the quarter (\$8,841,817) to reflect these two changes. Adding \$637,962 and subtracting \$495,921, our estimated total cost for the quarter is \$8,983,858.

Both states record a sizeable portion of their costs as the "unspecified portion of other." Rather than exclude these costs altogether, we assumed that the ratio of variable to total costs is the same for general administrative costs in this category as for all other costs. Arizona provided us with an annual breakdown of the unspecified portion of other, which divided costs into three categories: Non-reservation training, reservation administration, and various operating costs. We eliminated from the annual total of \$3,861,443 the \$382,836 in training costs we assumed to be fixed and divided by four to compute an average quarterly cost of \$869,652 for the unidentified administrative costs.

To estimate the variable portion of these general administrative costs, we assumed that the ratio of variable to total costs is the same for these costs as for all other costs. We calculated this percentage as the ratio of (1) variable costs (the costs of certification, issuance, and ADP operations) to (2) total costs *minus* the administrative costs categorized as the unspecified portion of other. The costs of certification, issuance, and ADP operations total \$6,751,268. Total administrative costs are \$8,983,858. The adjustment ratio is therefore \$6,751,268 to \$8,114,206 (\$8,983,858 minus \$869,652), or 83 percent. We therefore estimate that \$721,811 (83 percent of \$869,652) in unspecified other costs is variable.

Our estimate of total variable costs thus includes the following amounts:

TABLE C.1	
VARIABLES COSTS: ARIZONA (in Dollars per Quarter)	
Certification	\$4,061,810
Issuance	1,518,649
ADDP Operations	1,170,809
Unspecified Other Costs	721,810
Total Variable Costs	\$7,473,078

The average monthly caseload (cases that received a paid benefit) for the same quarter was 171,655. The estimated monthly cost savings per FSP case closed is thus \$14.51.

Because Arizona does not distribute the cost of tasks performed for multiple programs evenly among those programs, this estimate of potential FSP administrative cost savings may be low. If the task a worker is performing at the time they are queried for the state's worker time allocation (random moment) survey is a task required for multiple programs, the labor time is attributed to a single program on the basis of the following hierarchy: AFDC, Medicaid, food stamps, and general assistance. Consequently, Arizona tends to overstate administrative costs for AFDC and understate those for food stamps.

b. Michigan

We included in our estimate of variable costs the costs of certification, issuance, ADP operations, and a percentage of unspecified other costs. Unlike Arizona, where benefits are mailed to most recipients, Michigan negotiates vendor contracts with banks and other establishments to distribute food stamp benefits to recipients. Michigan DSS staff believe that because vendors have had to accept price freezes for a few years, they would be unlikely to lower their fees in response to a small decrease in the number of cases to which they disburse benefits. We therefore assumed that only the non-vendor portion (\$35,779) of total issuance costs for the quarter were variable.

Michigan reported a total of \$12,018,293 in the category of "unspecified portion of other." To estimate the variable portion of these costs, we assumed that the ratio of variable to total costs is the same for these costs as for all other costs. We calculated this percentage as the ratio of (1) variable costs (the costs of certification, issuance, and ADP operations) to (2) total costs *minus* the administrative costs categorized as the unspecified portion of other. The costs of certification, issuance, and ADP operations total \$12,307,646. Total administrative costs for the quarter were \$31,009,721. The adjustment ratio is therefore \$12,307,646 to \$18,991,428 (\$31,009,721 minus \$12,018,293), or 64.8 percent. We therefore estimate that \$7,787,854 (64.8 percent of \$12,018,293) in unspecified other costs is variable.

Our estimate of total variable costs thus includes the following amounts:

TABLE C.2	
VARIABLE COSTS: MICHIGAN (in Dollars per Quarter)	
Certification	\$11,757,956
Issuance (non-vendor portion)	35,779
ADP Operations	513,911
Unspecified Other Costs	7,787,854
Total Variable Costs	\$20,095,500

The average monthly caseload over the same quarter was 405,525. The estimated monthly cost savings per FSP case closed is thus \$16.52.

2. AFDC Administrative Cost Savings

The states report AFDC administrative expenditures to HHS on Form ACF-231. Both Arizona and Michigan categorize almost all of their AFDC spending (94 and 99 percent respectively) as other administrative expenditures. Consequently, it is difficult to distinguish variable from non-variable costs. We therefore estimated administrative cost savings per AFDC case closed by adjusting our estimate of food stamp administrative cost savings to reflect the disproportionate amount of time casework staff spend on AFDC administration. We applied this adjustment factor only to certification costs, which we assumed are largely labor-driven. We assumed other administrative costs are the same per case for the two programs.

a. Arizona

To distribute costs among programs, the state regularly samples FAA employees (primarily caseworkers) who administer more than one program. Data from the Arizona Random Moment Sampling System (ARMS) for the July to September 1992 quarter indicate that employees spent 39.76 percent of their time on AFDC casework and 32.85 percent on food stamp casework. The AFDC-to-food stamp time expenditure ratio is thus 1.21. We further adjusted this ratio to reflect

the caseload differences between the two program; the AFDC caseload over the quarter was 43 percent as large as the FSP caseload. Thus, we estimated that on a per-case basis, AFDC casework consumed almost three (2.81) times as many caseworker hours as food stamp casework. Applying this 2.81 adjustment factor to the certification cost per case calculated for the FSP (\$7.89) and assuming other administrative costs per case (\$6.62) remain constant, we estimated that the administrative cost savings per AFDC case closed in Arizona is \$28.79.

b. Michigan

Information gathered from caseworkers through the state's Worker Time Allocation Survey (WTAS) is tallied on an annual basis. In fiscal year 1992, caseworkers spent 39.85 percent of their time on AFDC casework and 25.65 percent of their time on food stamp casework. We assumed this 1.554 AFDC-to-food stamp ratio held for the fourth quarter. Taking into account the caseload difference between the two programs (the AFDC caseload is 55 percent as large as the FSP caseload), we estimated that on a per-case basis, caseworkers spent 2.83 times as many hours on AFDC casework as on food stamp casework. Applying this adjustment factor to the certification cost per case calculated for food stamps (\$9.66) and assuming other administrative costs per case (\$6.86) remain constant, we estimated that the administrative cost savings per AFDC case closed in Michigan is \$34.20.

C. RECOVERED PREVIOUS BENEFIT OVERPAYMENTS

An overpayment is defined as the difference between the total benefits paid to the client and those that *should* have been paid. The savings to the agency is not, however, the total amount of the overpayment, but the portion that is actually recovered. The amount the agency actually recovers through the claims process depends on a number of factors, including the size of the overpayment, the income and assets of the household, the cause of the overpayment (household error, agency error,

or intentional program violation), when the overpayment occurred, whether the case is currently receiving benefits, and the method by which the agency attempts to recover the overpayment.

Pursuing a claim is a lengthy process. Even if the agency establishes the claim soon after detecting the overpayment, it may take many months or even years to collect. Hence, it was not possible for us to measure directly the value of recovered overpayments. Instead, we estimated this amount as the product of (1) the value of identified overpayments, and (2) the estimated proportion of identified overpayments recovered over a two-year period in Arizona and Michigan.

1. Value of Identified Overpayments

On the basis of discussions with state agency staff, we assumed that the overpayment amounts entered for food stamps and AFDC on the data collection form are the amounts the agency will attempt to recover (in other words, the claim amounts). For the few cases where the overpayment amount was omitted from the form, we made the following assumptions:

- In Arizona, the amount of the overpayment was missing for one data collection form pertaining to a BEER follow up. We assumed the amount was the mean overpayment for all cases with an overpayment identified by the BEER match in the Arizona sample.
- In Michigan, the amount of the overpayment was missing for six data collection forms. On three, the caseworker indicated that the case had been referred to OIG. We assumed that the amount of these overpayments was \$500, the minimum amount that would be referred for investigation. For the other forms, we assumed the overpayment amount was the mean overpayment for all cases with an identified overpayment for the specific database in the Michigan sample.

2. Proportion of Overpayments Recovered

FCS and HHS to estimate regression models of food stamp and AFDC claims collections with the value of claims established in each quarter of the past two years as explanatory variables.

We chose a two-year period based on our rough estimate of the amount of time required to collect a food stamp overpayment of average value through recoupment. In the July to September 1992 quarter, the average household error claim (non-fraud) was \$270 in Arizona and \$381 in Michigan. The average benefit amount over the same period was \$190 in Arizona and \$171 in Michigan. Assuming the amount recouped per month is 10 percent of the household's monthly benefit amount (the rate established by regulation for household error claims), the average household would pay off the average claim in 14 months in Arizona and 22 months in Michigan. During the same quarter, the average fraud claim established was \$1,364 in Arizona and \$819 in Michigan. Assuming the amount recouped per month is 20 percent of the household allotment (as permitted for fraud claims), the average household would pay off the average fraud claim in 36 months in Arizona and 24 months in Michigan. These estimates assume (1) that households do not leave the program before the claims are collected, (2) that households for which claims are established have average benefit levels, and (3) that claims are not subsequently recategorized after their initial establishment as either household error or fraud. Although these estimates are obviously rough, they suggest that in both states, most food stamp claims could be collected in two years or less. (Substantially fewer claims are established as fraud than as household error in Arizona.)

To estimate the amount of overpayment recovered for each dollar established as a claim, we estimated regression models of food stamp and AFDC claims collection using five years of quarterly data reported by Arizona and Michigan to FNS and HHS. As explanatory variables, we used the value of claims established in each quarter of the past two years and dummy variables for the first, second, and third quarters of each fiscal year. Underlying this model is the assumption that the value of claims collected depends only on (1) the value of claims established in the past two years and (2) the quarter of the year. We included dummy variables for the quarter of the year to account for any

variation in collections or reporting of collections by the time of the year. This model does not take into account any major changes in claims collection procedures that may have occurred over the past five years.

The coefficients on the claims-established variables provide estimates of the amount that will be collected each quarter for each dollar established as a claim. For example, the coefficient on the claims-established variable that is not lagged provides an estimate of the value of claims collected in the quarter the claim is established; the coefficient on the claims-established variable that is lagged one quarter provides an estimate of the value of claims collected in the quarter after the claim is established. The total proportion of claims collected over a two-year period can be estimated from the sum of the coefficients. Recovery rates for food stamps and AFDC are presented in the following sections.

a. Food Stamps Claims Collection Rates

Our estimated food stamp overpayment recovery rates are based on data reported by Arizona and Michigan to FCS on Form 209, "Status of Claims Against Households" between 1988 and 1993. In Arizona, overpayment writers indicated on the data collection forms whether overpayments were attributable to agency error or to client error. We calculated separate recovery rates for these two types of claims in Arizona. (In six cases, no categorization was given on the data collection form, and in two others, the caseworker attributed the overpayment to both agency error and client error. For these eight cases, we assumed the cause was agency error.) Because Michigan did not distinguish between types of claims, we calculated a single recovery rate for all food stamp claims established.

Results of our regression analysis of food stamp claims collection, based on quarterly data from 1988 to 1993, are presented in Table C.3. These results suggest that for every dollar of agency-error food stamp claims established in Arizona, 28 cents are recovered within one year and another 4 cents the following year, yielding a two-year recovery rate of 32 percent. For every dollar of client-error

TABLE C.3
REGRESSION MODELS OF FOOD STAMP CLAIMS COLLECTION
(Standard Errors in Parentheses)

	Arizona		Michigan
	Agency Error	Household Error	
Constant	43,201 (14,007)	56,880 (62,773)	209,915 (82,177)
Claims Established Current Quarter (x100)	4.46 (3.71)	16.54 (12.01)	0.55 (4.77)
Claims Established Lagged One Quarter (x100)	9.82 (4.16)	16.09 (9.03)	1.71 (6.61)
Claims Established Lagged Two Quarters (x100)	5.90 (5.26)	2.58 (9.20)	9.56 (7.91)
Claims Established Lagged Three Quarters (x100)	7.91 (5.03)	-5.46 (10.17)	9.27 (8.56)
Claims Established Lagged Four Quarters (x100)	-3.33 (4.99)	11.62 (14.11)	-0.77 (8.99)
Claims Established Lagged Five Quarters (x100)	-2.31 (5.16)	7.15 (8.31)	1.22 (11.89)
Claims Established Lagged Six Quarters (x100)	15.16 (7.34)	12.60 (10.82)	2.09 (11.80)
Claims Established Lagged Seven Quarters (x100)	-5.70 (6.91)	-8.70 (13.76)	3.48 (8.23)
Quarter 1 Dummy	-16,343 (8,094)	-17,509 (26,657)	-28,029 (79,622)
Quarter 2 Dummy	-3,712.58 (8,698)	21,948 (23,594)	25,538 (78,735)
Quarter 3 Dummy	84,919 (7,804)	49,031 (26,736)	96,974 (88,264)
Adjusted R ²	0.97	0.60	0.90
Number of Observations	14	14	14

claims established, 30 cents are collected in the first year and 23 cents the following year. The two-year recovery rate is thus 53 percent.

For every dollar of food stamp claims established in Michigan, 21 cents are collected in the first year and 6 cents in the second, for a two-year recovery rate of 27 percent.

b. AFDC Claims Collection Rates

AFDC overpayments and collections are reported by the states to the HHS on Form SSA-4972, the "Quarterly Report of Recoveries of Overpayments (Aid to Families with Dependent Children)." Results of our regression analysis, based on quarterly data from 1986-92 for Arizona and 1985-92 for Michigan, are presented in Table C.4. These results suggest that for every dollar of AFDC overpayments identified in Arizona, 29 cents are collected in the first year and 40 cents in the second year. The two-year recovery rate is 68 percent. The erratic pattern of AFDC collections in Michigan precluded our calculating a recovery rate through regression analysis. (The model actually predicted *negative* collections in the second year, for example.) We therefore assumed the same recovery rate (27 percent) for both AFDC and food stamps in Michigan. Since there is reason to believe that the recovery rate for AFDC is actually higher than that for food stamps (as it is in Arizona), this assumption should yield a low estimate of savings from AFDC collection efforts.

D. UNMEASURED SAVINGS

We identified three additional benefits of IEVS matching and targeting: (1) savings from actions in other programs, (2) deterrent effects, and (3) possible improvements in caseworker morale.

Savings to the Medicaid program constitute the largest portion of savings in the first category. Our rough estimate of savings resulting from Medicaid case closures is based on per-person Medicaid cost data obtained from the states. To calculate savings per case, we multiplied the per-person cost by the estimated number of persons per case in our sample. The average was 1.4 persons per case in our Michigan sample and 3.0 persons per case in our Arizona sample.

TABLE C.4
REGRESSION MODELS OF FOOD STAMP CLAIMS COLLECTION
(Standard Errors in Parentheses)

	Arizona	Michigan
Constant	-59,234 (33,524)	1,202,512 (258,390)
Claims Established Current Quarter (x100)	5.88 (4.62)	-1.12 (6.06)
Claims Established Lagged One Quarter (x100)	3.91 (5.00)	6.46 (8.18)
Claims Established Lagged Two Quarters (x100)	10.33 (5.91)	-0.96 (7.17)
Claims Established Lagged Three Quarters (x100)	8.48 5.70	3.28 (7.14)
Claims Established Lagged Four Quarters (x100)	3.95 (6.34)	-3.18 (7.19)
Claims Established Lagged Five Quarters (x100)	15.14 (5.92)	-2.60 (4.85)
Claims Established Lagged Six Quarters (x100)	16.86 (6.29)	-0.47 (4.26)
Claims Established Lagged Seven Quarters (x100)	3.81 (8.97)	-1.64 (3.09)
Quarter 1 Dummy	-14,086 (21,088)	-57,503 (148,586)
Quarter 2 Dummy	-2,326 (20,511)	166,186 (118,251)
Quarter 3 Dummy	29,000 (6,983)	60,061 (44,927)
Adjusted R ²	0.93	0.19
Number of Observations	18	21

APPENDIX D

COSTS INCURRED DURING THE IEVS PROCESS

This Appendix is a supplement to Section B of Chapter IV of Volume I of this report and provides details concerning the methodology and data used to calculate costs incurred during the IEVS process. These costs are of four types: labor, data processing, overhead, and materials and supplies. State agency accounting procedures precluded our measuring these costs independently of one another. We therefore assessed these costs *in the aggregate* at four stages in the IEVS process:

1. Follow-up
2. Matching and targeting
3. Claims establishment and collection
4. Development

In the sections that follow, we explain how these costs were measured.

A. FOLLOW-UP COSTS

Following up on IEVS hits requires the involvement of a range of state agency staff members (see box, "Personnel Involved in the IEVS Process"). An ideal way to measure costs would be to track the time spent by each staff member and then to convert this time to a dollar value by multiplying the number of hours by a measure of the cost to the agency of each hour of the person's time. However, given the extraordinary burden this type of tracking would have imposed on agency staff, we adopted a simpler method for measuring costs associated with follow up, as explained below.

1. Measuring Staff Time

Because caseworkers perform the bulk of follow-up activities, we directly tracked the time of these staff persons. Other staff time (supervisory, clerical, and other support) was estimated on the basis of caseworker hours.

Caseworkers were asked to record the amount of time they spent each time they handled a case. They were also asked to indicate which tasks they completed. They could do this either by checking

the box for the task or by entering the time taken to perform the task. The data collection forms instructed caseworkers to round their time estimates to the nearest five minutes. Some Michigan caseworkers argued that this led to an overestimate of the time required for follow ups, since some took only a minute or two.

All time data were missing on 14 data collection forms in Arizona and three data collections forms in Michigan. For these, we assumed that the follow up took the caseworker the same amount of time as the average follow up of a match to that database in our demonstration.

In both states, caseworkers occasionally recorded the time spent on each task but failed to record the total. For these cases,

we summed the times recorded for each task and entered the total. On some forms, the caseworkers recorded the time taken for some tasks but simply checked off others and failed to enter the total time spent. To calculate the total time spent, we assumed that the amount of time caseworkers spent on the tasks they simply checked off was the average amount of time spent on that task. The average was taken over all data collection forms on which the caseworker had recorded completing the task. However, because it may take longer to complete a task the first time one does so than the second,

Personnel Involved in the IEVS Process

The principal component of the cost of IEVS matching, targeting, and follow up is the cost of the personnel involved in each phase of the IEVS process. Although staff roles differ in the two states, we identified in both states six general types of staff involved in the process:

Computer programmers develop programs for creating the tapes of SSNs to be matched with data at the source agencies, processing tapes received from the source agencies, conducting any matching that occurs at the agency, and targeting cases for follow up. Most of the programmers' time was devoted to developing, rather than operating, IEVS.

Computer operators may be responsible for preparing tapes to send to the source agencies, for mounting tapes, printing out hard-copy reports, and for printing out and mailing letters produced by the computer system.

Clerical staff may conduct on-line matches, distribute hard-copy reports to local offices and to caseworkers, and track and monitor the responses to these reports. Clerical staff may be at the state, district, or local offices.

Caseworkers may review casefiles, verify information by contacting such third parties as employers and financial institutions, recompute eligibility and benefits, calculate previous overpayments, and refer cases to a fraud investigation unit. In both states, these functions are divided between regular caseworkers and specialized caseworkers (overpayment writers and designated staff persons) who are responsible for calculating overpayments and establishing claims.

Caseworker supervisors monitor the timely follow up of hits and resolve any problems that arise during follow up.

Senior managers oversee the whole IEVS process, including the development of new matching and targeting strategies.

we calculated different averages based on the number of times caseworkers had previously handled the case.

2. Measuring Unit Labor Cost

The full cost of a caseworkers' time includes not only the caseworker's wage, but overhead, fringe benefit, support, and supervisory costs. To calculate the fully loaded hourly cost of a caseworker's time in Michigan, we adopted an approach very similar to that developed by state staff for the wage reporting evaluation (Ward and Smucker 1990). Arizona's accounting system does not lend itself to any reasonably simple calculation of loaded rates. To estimate an hourly rate for caseworkers in Arizona we therefore adjusted the Michigan rate to reflect reported differences in the two states' costs. In the sections that follow, we first detail the method used to estimate the hourly rate in Michigan, and then describe how we adjusted this figure to estimate Arizona's costs.

a. Michigan

The state's cost allocation department computes on a quarterly basis so-called cost pools for central and local office administration and for various employee groups. As outlined in the state's cost allocation plan (Michigan Department of Social Services 1988), these pools include costs in the following categories:

- ***Personal services***, including salaries and wages, health insurance contributions, unemployment and workmen's compensation, contractual personal services, and civil services charges
- ***Travel/transportation***
- ***Contractual services, supplies, and materials (CSS&M)***, including costs of office space, communication services, education and professional fees, office supplies, printing, small equipment purchases, and administrative support services provided by other agencies
- ***Equipment***, including the purchase, lease/purchase or rental of office machines and furniture, communication systems and automatic data processing equipment, and other equipment items with a unit cost of \$500 or more

The relevant cost pools for our calculations are four: A-04 (caseworkers), A-05 (caseworker supervisors), A-06 (central office administration), and A-07 (local office administration). Central office costs, which include the costs of such statewide administrative services as accounting, personnel, and legal services, are allocated to cost pools A-04, A-05, and A-06 on the basis of the percentage of total DSS staff each cost pool represents. (The amount of central office costs allocated to each pool is shown in the quarterly report on Administration and Training Costs.) Local office costs, which include the costs of clerical support and office space, are distributed on the basis of the percentage of total local office staff the A-04 and A-05 cost pools represent. (This percentage was obtained from the Direct Worker Count report for the quarter.) Our cost calculations, based on cost pool figures from the Administration and Training Costs report for the quarter ending September 30, 1992, are detailed in the table below.

TABLE D.1
COST OF CASEWORKER LABOR: MICHIGAN
(in Dollars per Cost Pool)

	Cost Pool A-04 Caseworkers	Cost Pool A-05 Supervisors	Cost Pool A-07 Local Office Administration	Total Cost of Caseworker Function
Cost Pool	42,064,373.06	10,918,474.01	46,953,611.45	
Central Office Administrative Costs (A-06) Allocable to Pool	3,302,591.68	630,059.33	2,652,881.38	
Subtotal	45,366,964.74	11,548,533.34	49,606,492.83	
Percent Allocable to Caseworker Function	100%	100%	57.73 %	
Totals	\$45,366,964.74	\$11,548,533.34	\$28,637,828.31	\$85,553,326.39

The average number of full-time equivalent (FTE) positions in the A-04 classification was 3,373 during the fourth quarter. We assumed 2,080 paid caseworker hours per year per caseworker (52 weeks, 40 hours per week). Multiplying the number of FTEs in the fourth quarter by paid hours per quarter (520), we calculated 1,753,960 paid caseworker hours for the quarter. Dividing total costs associated with caseworker labor (\$85,553,326) by the total number of paid caseworker hours, we obtained a cost per caseworker hour of \$48.78.

b. Arizona

Since caseworkers' primary responsibility is certification, we used certification costs billed to FCS by Arizona and Michigan (adjusted to reflect the proportion of caseworkers hours spent on food stamp casework in the two states) to develop a state-to-state cost ratio. Our calculations suggest that costs associated with caseworker labor in Arizona are 80.1 percent of those in Michigan. Our estimates of time spent on food stamp casework were obtained from Arizona Random Moment Survey (ARMS) data for the quarter ending September 30, 1992, and from Michigan Worker Time Allocation Survey (WTAS) data for the year ending September 30, 1992. (Our calculations are detailed in Table D.2.) Applying this cost ratio to the fully loaded hourly rate calculated for caseworkers in Michigan (\$48.78), we calculated an hourly rate of \$39.07 for caseworkers in Arizona.

TABLE D.2

ADJUSTMENTS TO QUARTERLY CERTIFICATION COSTS PER CASEWORKER

	Quarterly Certification Costs	Percent Time Spent on FSP Work	Adjusted Quarterly Cost	Number of Caseworkers (FTEs)	Quarterly Cost Per Caseworker
Arizona	\$4,061,810	32.60	\$12,459,540	1,300	\$9,584.26
Michigan	10,482,592	25.65 ^a	40,867,805	3,416 ^a	11,963.64

^aBecause Michigan Worker Time Allocation Survey (WTAS) data are annual, we used annual averages for quarterly certification costs and FTEs.

We considered two other methods for adjusting the Michigan hourly rate to reflect differences in Arizona's costs. The first uses the ratio of caseworker salaries in the two states as an adjustment factor. The second uses the ratio of total administrative costs in the two states.

- ***Caseworker base salaries.*** The average annual salary for caseworkers in Arizona (\$18,536) is 59.1 percent of that in Michigan (\$31,374). Using this ratio as an adjustment factor yields an hourly labor cost figure for Arizona of \$28.83.
- ***Total administrative costs.*** Total fourth-quarter FSP administrative costs were \$8,983,858 in Arizona and \$31,009,721 in Michigan. There were 1,300 FTEs in Arizona and 3,373 FTEs in Michigan over the quarter. Total cost per caseworker was thus \$6,911 in Arizona and \$9,194 in Michigan. Using this ratio (75.2 percent) as an adjustment factor yields an hourly labor cost figure for Arizona of \$36.67.

We believe adjusted certification costs provide a more accurate measure of differences in the two states' costs of caseworker follow up than can be obtained with either of these two methods. Using base salaries to calculate an adjustment factor assumes that the same state-to-state cost ratio applies not only to salaries but to other costs associated with caseworkers' labor: employee benefits, supervision, clerical support, facilities, equipment, and supplies. A ratio based on total administrative costs reflects differences in costs associated with a range of activities, such as fraud investigation, quality control, and ADP operations, that do not involve caseworkers. Adjusted certification costs are a more inclusive measure than are salary costs, yet exclude costs unrelated to caseworker labor. The adjustment factor based on certification costs also yields the highest estimate of caseworker labor costs in Arizona. This approach is thus in keeping with our conservative estimation of cost-effectiveness.

B. CLAIMS ESTABLISHMENT AND COLLECTION COSTS

Because our tracking of staff time ended when a case left the caseworker's hands--in Arizona, when the case was referred to the collection unit (OARC), and in Michigan, when the case was referred to a DSP-administered hearing or to the fraud unit (OIG)--we used state agency estimates and aggregate data reported by the states to FNS on Form 269 and 366B to estimate the costs of

claims establishment and collection.¹ Costs are incurred on a per-case basis. We assumed that the cost of establishing and collecting a claim is the same whether the overpayment was for food stamps, AFDC, or both.

The states treat overpayments differently depending upon their dollar value and/or cause. We therefore calculated separate cost estimates for claims of different types in each state. (See Chapter II, Section B of Volume I for discussions of these claims establishment and collection procedures in Arizona and Michigan respectively.) These costs depend on the procedures performed. Our estimates are admittedly rough, as the data needed to measure the costs of claims collection and establishment more accurately are unavailable. However, these estimates are fairly conservative and should not substantially underestimate the costs associated with recovering overpayments. The sections that follow detail our approach to measuring the cost of each of these procedures in Arizona and Michigan.

1. Arizona

We assumed that the processing of agency error claims involved the following procedures: categorization by OARC, client notification, and administration of collections (inputting payment information). We assumed that the processing of most household error claims involved the following procedures: categorization by OARC; client notification; investigation by OIG, which may lead to a hearing or prosecution; and administration of collections. Household error claims of less than \$35 were an exception. Because Arizona establishes but does not attempt to collect food stamp claims of less than \$35, we assumed that the only cost that will be incurred for these overpayments is the cost of notifying the client of the claim.

¹ FNS Form 269, the "Financial Status Report," lists quarterly expenditures related to fraud control. FNS Form 366B, the "Program and Budget Summary Statement, Part B - Program Activity Statement," lists the number of cases referred for investigation, the number and outcomes of investigations completed, and the numbers of administrative disqualification hearings held and prosecutions conducted over the quarter.

Per-case cost estimates for these various procedures are presented in Table D.3. Cost calculations for each procedure are described below.

a. Categorization by OARC

Since all claims are officially categorized and established by OARC, we assumed that the cost of OARC procedures will be incurred for both agency error and household error claims. Our per-case estimate of this cost is based on results of an internal OARC study (Werne 1993) and information gathered on our data collection forms.

A recent OARC study found that it cost approximately \$150 for caseworkers or Quality Control staff to detect an overpayment, overpayment writers to write up an overpayment, and OARC staff to determine the cause of an overpayment and enter the information into the computer system. To avoid double-counting, we subtracted from this estimate the cost of those procedures (detection and write-up) that were recorded on our data collection forms. To calculate the cost of these two procedures, we estimated from information on our data collection forms the average time spent referring the case to the overpayment unit and calculating the overpayment (completing form FA-529). The average was 146.89 minutes. Assuming a fully loaded hourly rate of \$39.07, the cost of these procedures is \$95.65. The cost of OARC claim categorization and computer entry is thus \$54.35.

b. Client Notification

Data to calculate the cost of notifying clients that a claim has been established against them were not available in Arizona. We therefore used our Michigan estimate for both states. Cost calculations are described below in Section 2, subsection a.

c. Investigation and Possible Hearing or Prosecution

We based our estimate of the cost of these procedures on quarterly data reported by the state to the federal government on FCS Form 269, which provides cost data, and FCS Form 336B, which

ESTABLISHMENT AND COLLECTION: ARIZONA
(In Dollars per Case)

[illegible]

provides information on investigations, hearings, and prosecutions. The annual accounting periods for the two forms are different in Arizona. Form 269 provides cost data for October 1991 to September 1992, while Form 336B provides data on the number of cases investigated between July 1991 and June 1992. We therefore had to assume that the average quarterly caseload for the year held constant over our study period.

For fiscal year 1991, Arizona reported fraud-control costs of \$801,373. The state bills these costs retroactively and reports in this category only costs associated with cases where the cause of the overpayment is determined to be fraud. (Costs associated with cases where the cause of the overpayment is determined to be household error or agency error are not reported in this category.)

We therefore assumed that this dollar figure represents the cost of cases with *positive* investigative outcomes (that is, cases investigators determined to have involved fraud). Form 366B shows a total of 6,566 positive investigations for the year. All of these cases have a food stamp component, but some also receive AFDC. For these combination cases, the costs of investigating a claim and pursuing repayment are split between the two programs. Because we could not determine what proportion of the 6,566 cases were food-stamp-only, we assumed that the proportion was the same as for the caseload as a whole (about 63 percent) and that there were therefore 4,137 food-stamp-only cases and the 2,429 food stamp/AFDC cases with positive investigative findings. Assuming that per-case costs are the same on average for the two types of case, the costs reported to FCS on Form 269 are the equivalent of the *full* cost of 5,351.5 cases (4,137 food-stamp-only cases and one-half of 2,429 combination cases). The average cost per positive investigation is therefore \$801,373 divided by 5,351.5 cases, or \$149.75 per case.

In applying this average cost to all overpayments over \$35 attributed to household error in our study, we made the following assumptions:

- *The proportion of cases in our study that become subject to legal action is the same as in the caseload as a whole.* Some cases with positive investigative findings will become subject to hearings or prosecutions, while others will not. Since we could

not separate the cost of legal proceedings from other fraud-control costs, we estimated an average cost for all cases found to involve fraud. The average cost figure substantially underestimates costs associated with investigations that lead to a hearing or prosecution and overestimates costs associated with investigations that do not lead to legal proceedings. However, we assume that the average cost is equally applicable to the cases in our research sample as to the caseload as a whole.

- *The costs associated with cases that are not investigated, or that are investigated but found not to involve fraud, are the same as costs associated with cases found to involve fraud.* This assumption obviously overestimates the costs of non-fraud cases, since none will be subject to legal proceedings. However, no data were available to calculate the cost of non-fraud cases.

d. Administration of Collections

Data to calculate the cost of maintaining payment records were not available in Arizona. We therefore used our Michigan estimate for both states. Cost calculations are described below in Section 2, subsection d. In this category, we also included the cost of recovering overpayments through so-called Treasury action (primarily, the reduction of state tax refunds). Unpublished OARC data show that about 9.4 percent of recovered overpayments are collected by this method. We assumed that the proportion of cases for which state tax refunds were reduced was also about 9.4 percent. The cost for this collection method is deducted from the dollars recovered and costs the state \$4.50. Assuming that 9.4 percent all of cases with detected overpayments incur the cost of a Treasury action, the cost of such an action, averaged over all cases with detected overpayments, is 42 cents per case. This is admittedly a very rough estimate since (1) the proportion of dollars collected by Treasury action is not necessarily the same as the proportion of cases from which claims are collected by this method, and (2) the number of households from which any payments are received is smaller than the number of households with detected overpayments. However, since this approach almost certainly overstates costs, it is in keeping with our conservative estimation of cost-effectiveness.

2. Michigan

In Michigan, the cause of the overpayment was not identified on the data collection form. However, Michigan's procedures and estimated costs vary depending upon the total dollar amount of the overpayment (combining food-stamp and AFDC amounts). We assumed that processing an overpayment of less than \$200 involved two procedures: notifying the client and administering collections. We assumed that processing an overpayment of \$200 to \$500 involved three procedures: client notification, a DSP-administered hearing, and administration of collections. We assumed that processing a claim of more than \$500 also involved three procedures: client notification; OIG investigation and possible prosecution; and administration of collections. Per-case cost estimates for these various procedures are presented in Table D.4. Cost calculations for each procedure are described below.

a. Client notification

The estimated cost of this procedure is based on data from four sources:

- Operational costs for the Automated Recoupment System (ARS) for September 1992, provided by Michigan's Bureau of Information Systems
- The State Recoupment Activity Summary Report for September 1992, which shows the number of cases from which collections were made
- FCS Form 209 ("Status of Claims Against Households") for July to September 1992, which shows the number of new FSP claims established during the quarter
- Form SSA-4972 ("Quarterly Report of Recoveries of Overpayments") for July to September 1992, which shows the number of new AFDC overpayments identified during the quarter

Because the data are sketchy, our estimates are necessarily crude. However, ARS costs are low and consequently should not have a large impact on our overall cost estimates for claims establishment and collection.

TABLE D.4

COSTS OF CLAIMS ESTABLISHMENT AND COLLECTION: MICHIGAN
(In Dollars per Case)

Overpayment Amount (Combined AFDC/FSP Total)	Establishment and Collection Procedures				Total
	Client Notification	DSP-administered Hearing	OIG Investigation, Possible Prosecution	Administration of Collections	
< \$200	1.75	NA	NA	20.88	22.63
\$200 - \$500	1.75	221.41	NA	20.88	244.04
> \$500	1.75	NA	679.81	20.88	702.44

Michigan's ARS performs benefit recalculations for automated recoupment, generates letters to clients, and maintains payment records. ARS operational costs were \$26,005.98 for the month of September. We assumed that this cost was attributable to (1) one benefit recalculation and one letter generated for each new claim established that month and (2) one payment per case with any collection activity. We assumed that each new claim represented two computer transactions and each payment represented one, and that the cost per transaction was constant. Thus, each new claim consumed twice the computer resources consumed by each payment recorded.

During September, payments were logged into the system for 21,697 cases. Some 8,522 food stamp claims and 3,620 AFDC claims were established during the July to September quarter, for an average of 4,047 new claims per month. Assuming that each payment represented one computer transaction and each new claim represented two transactions, the total number of transactions over the month of September was 29,791. The cost per transaction was therefore about 87 cents. Since client notification involved what we've defined as two transactions (benefit recalculation and the generation of a letter), we estimated that the cost of this step in the collection process was \$1.75 per case.

b. DSP-administered Hearings

An unpublished DSS study conducted sometime around June 1990 found the cost per hearing to be about \$200. To inflate this cost to September 1992 dollars, we used the Bureau of Labor Statistics' Employment Cost Index for state and local government workers. Our estimated cost per hearing is thus \$221.41.

c. OIG Investigation and Possible Prosecution

The estimated cost of these procedures is based on data from four sources:

- OIG statistics for the 1990/91 fiscal years, which provided estimates of the cost per investigator and investigations completed per agent

- Cost pool data for OIG (Cost pool A-12) from the state's Cost Allocation Department, which specified the portion of OIG costs billed to the FSP
- FCS Form 366B ("Program and Budget Summary Statement Part B - Program Activity Statement"), which provided data on the number of investigations completed, hearings conducted, and cases prosecuted during fiscal year 1992
- FCS Form 269 ("Financial Status Report"), which provided fraud-control costs for fiscal year 1992

Total fraud-control costs reported to FCS on Form 269 were \$4,736,753 for fiscal year 1992. We assumed that this amount includes the following: (1) a portion of the cost of OIG investigations reported on Form 209, (2) a portion of the cost of DSP-administered hearings reported on Form 209, and (3) the full cost of almost all prosecutions reported on Form 209. To determine the cost of prosecutions, we subtracted from total fraud-control costs the estimated cost of OIG investigations and DSP-administered hearings.

We used OIG statistics to calculate the cost of completing an investigation. DSS Publication 6 (11-91) shows a cost per agent of \$49,937 and 178 investigations completed per agent in fiscal years 1990/91. Dividing one figure by other, we calculated a cost per completed investigation of \$280.54. We assumed that this figure was calculated in the middle of fiscal year 1990 (March 1990). Using the Bureau of Labor Statistics' Employment Cost Index for state and local government workers to inflate this cost to September 1992 dollars, we calculated that the average cost per completed investigation was \$312.62.

Form 209 shows 9,104 investigations completed in fiscal year 1992. Assuming a cost per investigation of \$312.62, these investigations cost a total of \$2,846,092. Cost allocation data show that 29.28 percent of OIG costs were attributable to control of food stamp fraud and abuse. Therefore, we estimated that \$833,336 in investigative costs were reported to FCS on Form 269.

Form 209 shows 445 administrative disqualification hearings conducted in fiscal year 1992. For lack of better data, we assumed that about half (\$111) of the cost of these hearings was billed to FNS and the rest to AFDC. Thus, we estimated that \$49,395 in hearing costs were reported on Form 269.

Subtracting the \$833,336 in investigative costs and \$49,395 in hearing costs from total fraud-control costs of \$4,736,753, we obtained an estimated total cost for prosecutions of \$3,854,022. Form 209 shows a total of 7,725 cases resolved through prosecution in fiscal year 1992. (About half of all such cases were resolved through disqualification consent agreements.) Up until October 1992, FCS assumed the full cost of prosecutions involving cases with a food stamp component. Some of the 7,725 cases prosecuted were AFDC-only and therefore could not be billed to FCS. However, since we could not determine what proportion of all prosecutions these cases represented and the proportion was likely to be small, we assumed that all 7,725 cases were billable to FCS. We therefore estimated that the cost per prosecution was \$3,854,022 divided by 7,725, or \$498.90.

This cost per prosecution is almost certainly an overestimate, for two reasons. First, although the vast majority of fraud-control costs reported to FCS are attributable to control of client fraud, state agencies also pursue vendor fraud. We were unable to subtract the cost of these activities from the total. Second, since there were probably more food-stamp than AFDC hearings reported on Form 366B, the share of hearing costs billed to FCS was probably more than half. The remaining costs, attributed to investigation and prosecution, would therefore be lower, and the average cost per prosecution somewhat less than \$498.90.

Because we could not know which cases in our sample referred to OIG would eventually be prosecuted and which would not, we calculated an average cost for all cases referred. Form 209 shows that 73.6 percent of all cases investigated are found to involve fraud and are referred for prosecution. So in 26.4 percent of all cases referred, the cost incurred is the cost of investigation (\$312.62), while in 73.6 percent of cases, the cost incurred is the cost of investigation plus the cost of prosecution (\$312.62 + \$498.90). The average cost for all cases is thus \$679.81.

d. Administration of Collections

Because we estimated savings from recovered overpayments over a two-year period, we assumed that the cost of administering collections would be the cost of recording 24 monthly payments. As

explained above in subsection a, we estimate that each ARS transaction cost approximately 87 cents. The cost of administering collections over a two-year period would therefore be \$20.88.

C. DATA PROCESSING COSTS

A third component of IEVS operational costs is the cost of data processing. We identified three types of data processing costs: microcomputer costs, mainframe computing costs, and payments made to other agencies for data processing. Because the cost of caseworkers' microcomputer use is already figured into unit labor cost estimates, we did not assess this cost independently.

Most of the uses of the mainframe for IEVS matching and targeting activities (preparing tapes, matching databases, or running targeting algorithms, for example) involve submitting a batch job to the computer. Both Arizona and Michigan provided us with batch processing cost data; Michigan also provided information on external agency charges.

We divided mainframe data processing costs into four categories:

1. The cost of producing the request tape and/or matching a tape from the external database against the client database.
2. The cost of processing the response tapes and/or running targeting algorithms.
3. Producing the IEVS reports.
4. Payments to agencies that maintain the external database.

The cost data provided by the states reflected the cost of conducting IEVS matching and targeting statewide. To estimate the costs of matching, targeting, and producing reports for the SSNs in our sample, we first determined the cost per SSN for each of the four categories of cost outlined above. To obtain a total matching and targeting cost for our sample, we multiplied this unit cost by the estimated number of SSNs in our sample processed at each stage.

Some data processing costs are fixed and do not vary with the number of SSNs processed. For example, it costs \$16 to deliver a tape to the IRS regardless of the number of SSNs on the tape. As

matching and targeting is ordinarily operated on a state-wide basis, the fixed cost should be set against the savings from IEVS follow ups state-wide. Because we assessed savings only for cases in our research sample, however, we prorated each fixed cost to reflect the proportion of the state caseload that was in our sample.

In the sections that follow, we discuss how we calculated the unit costs of mainframe batch processing, estimated the number of SSNs processed, and determined the unit costs of payments made to other agencies for data processing.

1. Unit Costs of Mainframe Computing

Arizona provided us with mainframe utilization data for July to November 1992. Because Arizona's Department of Data Administration (DDA) does not bill user agencies for mainframe computing, we used the rate schedule developed by another Arizona agency, the Department of Administration (DOA), to calculate the costs of the SWICA, BEER, and IRS matches. Michigan's Bureau of Information Systems (BuIS), which does bill users, provided us with total quarterly costs for the SWICA, UI, BENDEX, SDX, and IRS matches. (Discussions with Arizona and Michigan computing staff confirmed that DOA's rate-setting process is roughly comparable to that developed by BuIS.)

The sections below explain our unit-cost calculations for matches in Arizona and in Michigan.

a. Arizona

DDA provided us with the following data: a list and description of the jobs involved in each IEVS match; a rate schedule; and an accounting of printing and prime and non-prime time central processing unit (CPU) utilization logged to each job number from July to November 1992. From FAA Systems, we obtained match-specific data on the numbers of SSNs processed at each step in the matching and targeting process. Data limitations required that we make the following assumptions:

- ***The cost of each job conducted for a match in for our study was the average cost per job over the period in which the match was conducted.*** Since mainframe utilization data was aggregated either over a quarter (July-September) or a month (October and November), we calculated an average cost per job for the period by dividing the total number of CPU hours or lines of print logged to the job number by the number of jobs run. This approach may either under- or over-estimate costs, depending upon whether the number of SSNs processed for the match was more or less than the number processed for test runs during the same period.
- ***Separate entries for prime and non-prime CPU time charged to a given job number represent a single match run.*** If a job begun during prime time runs into non-prime time (or vice versa), it is logged twice, once under prime time and once under non-prime time processing. To avoid underestimating data processing costs, we assumed the two entries represent one match run, not two. We therefore calculated the cost of a particular job run as the sum of the costs of prime time and non-prime time processing logged under that job number.
- ***Database usage is 30 percent of CPU usage.*** Arizona was able to provide us only with data on prime and non-prime time CPU usage and lines printed. DDA staff recommended that we assume that database usage, which is billed at a higher rate, is one-third of CPU usage.
- ***The number of SSNs eligible to be matched to SWICA data is the number of SSNs on FAA's client database.*** This database includes SSNs of all applicants to AFDC and the FSP since late 1986, many of whom never received or are no longer receiving benefits. Since we do not know the number of SSNs on the database during our study period, we assume the number was the same as in February 1993, when we obtained data.

Using these assumptions, we calculated average costs associated with the SWICA, BEER, and IRS matches.

SWICA Match. The first step in the SWICA matching process was the creation of an extract from the database containing earnings information; these data were then screened to eliminate SSNs with earnings of less than \$3,600 for the quarter. The second step was the actual match of earnings data against all SSNs on the client database. The combined cost of these two steps was \$1,954.08. The estimated number of SSNs on the client database eligible to be matched was 1,590,728. The cost per SSN eligible to be matched was therefore 0.12 cents.

The next batch processing job eliminated all matched SSNs that were not in our research sample, then performed various targeting procedures and extracted case information for SSNs targeted for

follow up. The total cost of this job was \$3.32. We assumed that this cost varied with the number of research-sample SSNs matched, which was 160. The cost per SSN matched was therefore 2.08 cents.

The last step in the SWICA match sorts the data and prints reports on cases targeted for follow up. The cost of this step was \$4.10. There were 89 SSNS targeted for follow up. The cost per SSN targeted was therefore 4.61 cents.

BEER Match. The first step in each monthly match was the creation of the request tape sent to SSA. The cost of producing the tape, which contained 43,457 SSNs, was \$436.32. The cost per SSN eligible to be matched was therefore 1.00 cents.

For the BEER match, the state extracts earnings data from the SWICA database for use in targeting. Since the BEER data are annual, the SWICA extract is also created on an annual basis. We assumed the \$654.36 cost was fixed and prorated it to reflect the proportion of the caseload in the research sample (5.7 percent).

The program for processing the response tape of matched SSNs first targeted out SSNs on whom wage information was available from the SWICA extract. There were 47,018 SSNs processed during this step, at a total cost of \$15.05. The cost per matched SSN was therefore 0.03 cents.

The next step limited processing to research-sample cases, performed various targeting procedures, and printed out the reports. Because the cost of this step for a match run that involved 2,496 SSNs was only about 20 percent higher than the cost for a match run that involved 16 SSNs, we assumed that this cost was fixed. To avoid underestimating costs, we used the higher cost figure of \$93.11 per match.

Since we were able to isolate the actual cost of printing reports (as opposed to the CPU time involved), we spread this cost (\$3.03) over the number of SSNs targeted for follow up (144). The cost per SSN targeted for follow up was therefore 2.10 cents.

IRS. The first step in the annual IRS match was the creation of the request tape. The cost of creating this tape, which contained 457,372 SSNs, was \$915.62. The cost per SSN eligible to be matched was therefore 0.20 cents. Arizona was not able to provide us with shipping costs, so we assumed that the cost of shipping the request tape to the IRS was the same as it is in Michigan, \$15.95. This cost was prorated to reflect the proportion of the caseload in the research sample (6.5 percent).

The processing of the response tape included several targeting procedures. Since a comparison of a large and a small match run showed that the cost did not vary with the number of SSNs processed, we assumed the cost was fixed at \$38.31 per match.

The next step extracted case information for all SSNs targeted for follow up and printed reports. The cost of this step was \$17.96 for 302 SSNs. The cost per SSN targeted for follow up was therefore 5.95 cents.

b. Michigan

Michigan provided the following quarterly data for each database: the costs of matching, targeting, and producing reports; the number of SSNs on the request tapes; and the number of SSNs targeted for follow up. The state also provided data from individual match runs for each database, from which we were able to estimate the number of SSNs matched. The sections that follow describe, how we used this data to calculate costs for the SWICA, UI, BENDEX, SDX, and IRS matches.

SWICA Match. The first step in the SWICA match is the preparation of the request tape. The quarterly cost of producing these tapes, which contained a total of 127,993 SSNs, was \$174.24. The cost per SSN was therefore 0.14 cents.

The second step is the processing of the response tape. Since the MESC matches the request tape against several quarters of earnings information, rather than just the most recent, the proportion

of SSNs matched is high. (SSN matches with earnings data from earlier quarters are subsequently eliminated; we do not consider this targeting, since the SWICA match is intended to provide only the most recent earnings information.) In one SWICA match, 2,686 SSNs were sent and 2,406 were matched. We assumed that an equal proportion (89.6 percent) of the 127,993 SSNs eligible to be matched during the quarter were matched. We therefore estimated that the response tapes processed during the quarter contained 114,682 SSNs. Processing the response tapes cost \$69.53, so the cost per SSN matched was 0.06 cents.

The cost of printing reports for all SSNs targeted for follow up (22,875) during the quarter was \$25.35. The cost per SSN targeted for follow up was therefore 0.11 cents.

UI Applicant and Recipient Matches. The cost of preparing the UI applicant request tapes sent to the MESC during the quarter was \$174.24. The tapes contained a total of 127,993 SSNs. Thus, the cost per SSN eligible to be matched was 0.14 cents. Request tapes for the UI recipient match cost \$362.14 and contained 336,032 SSNs. The cost per SSN eligible to be matched was therefore 0.11 cents.

To determine the cost per SSN of processing the UI applicant and UI recipient response tapes, we estimated the number of SSNs matched during the quarter by applying the match rate from a single match. In one UI applicant match, 2,686 SSNs were sent to be matched and 1,172 were matched. We assumed that an equal proportion (43.6 percent) of the 127,993 SSNs sent to be matched during the quarter were matched and that the UI applicant response tapes consequently contained 55,805 matched SSNs. The cost of processing these 55,805 SSNs was \$33.37, making the cost per SSN matched 0.06 cents.

In one UI recipient match, 50,560 of the 155,089 SSNs eligible to be matched were matched. We therefore assumed that 32.6 percent of the 336,032 SSNs eligible to be matched during the quarter were matched. The cost of processing the UI response tapes was \$66.74. Averaged over the estimated 109,546 SSNs matched, the cost per SSN matched was 0.06 cents.

It cost \$6.94 to print reports for the 6,263 SSNs targeted for follow up in the UI applicant matches. The cost per SSN targeted for follow up was 0.11 cents. Printing reports cost \$19.73 for the 17,807 SSNs targeted for follow up in the UI recipient matches. The cost per SSN targeted for follow up was again 0.11 cents.

BENDEX. The first step in the BENDEX match was the preparation of the request tape and the updating of the client database to indicate which cases had been submitted to SSA for matching. The cost of these two procedures was \$1,720.47 for the quarter. The number of SSNs sent to be matched during the quarter was 376,211. The cost per SSN sent was therefore 0.46 cents. The state also paid \$15.95 to ship each tape to SSA. This cost was prorated to reflect the proportion of the caseload in the research sample.

For reasons outlined in Chapter V, we were unable to calculate a match rate for BENDEX. To estimate the number of matched SSNs on the reply tapes and orbit-file tapes sent by SSA during the

database. We assumed that the entire food stamp caseload (on average, 996,561 persons) was eligible to be matched three times during the quarter. This is an underestimate, since individuals that received AFDC and/or Medicaid only were also eligible to be matched. Total quarterly costs were \$1,871.12. The cost per SSN for the three SDX matches was 0.18.

Printing of 16,474 SDX reports cost \$625.05. The cost per SSN targeted for follow up was therefore 3.80 cents.

IRS Match. The first step in the IRS match is the creation of the request tape. The tapes prepared during the quarter contained 286,713 SSNs and cost \$55.41 to prepare. The cost per SSN eligible to be matched was therefore 0.02 cents. The state also spent \$15.95 to ship each tape to the IRS. This cost was prorated to reflect the proportion of the caseload in the research sample (3.9 percent).

We estimated the number of matched SSNs on the quarter's response tapes using the match rate for a single match. In this match, 95,744 SSNs were sent; data were received on 20,412 SSNs. Applying this 21.3 percent match rate to the 286,713 SSNs sent during the quarter, we estimated that the response tapes returned by IRS contained data on 61,070 SSNs. The tapes cost \$168.57 to process. Thus, the cost per SSN matched was 0.27 cents.

Reports were printed on 12,418 SSNs during the quarter, at a cost of 98.21. The cost per SSN targeted for follow up was therefore 0.79 cents.

b. Numbers of SSNs Processed

To determine the portion of statewide match costs attributable to cases in our sample, we multiplied the cost per SSN for each step by the estimated number of SSNs in our sample processed during that step.

To calculate the number of SSNs that were eligible to be matched, we counted SSNs on the monthly case-record extracts. In Arizona, we included the following SSNs:

- **SWICA Recipient Match.** The SSNs of clients who were in the first research group at the beginning of July.
- **BEER Match.** The SSNs of clients who were in the second research group at the beginning of July.
- **IRS Match.** The SSNs of clients who were in the third research group at the beginning of July. In Arizona, inactive cases are screened out before the match. However, all cases in our research sample were active for food stamps at the beginning of the study.

These counts slightly overestimate the number of SSNs that could have been matched because some of these SSNs could have been deleted from the database before the match takes place or the request tape was produced. This would have occurred if the case became ineligible for all programs administered by the FAA during our study period.

In Michigan, we included the following SSNs in our counts of the number of SSNs that could be matched:

- **SWICA and UI Applicant Match.** The SSNs of each applicant (one SSN per case) in the first research group that applied prior to the date the last request tape was created. A client who applied more than once was counted each time they applied. Michigan excludes from the request tape clients who received food stamps or AFDC in the past 105 days. We excluded clients who received food stamps in the past 3 months.² In our sample, about 30 percent of the applicants received food stamps in the previous three months. This could be because they left the program for only a few months, or because they failed to meet their monthly reporting or recertification requirements and hence had to reapply for benefits.
- **UI Recipient Match.** The SSNs of clients in the first research group whose applications were approved before the last request tape was created. There are more SSNs of recipients that could have been matched than SSNs of applicants because all SSNs in a case receiving benefits are sent on the recipient request tape, while only one SSN per applicant is sent on the applicant request tape.
- **BENDEX Match.** The SSNs of all clients who received benefits during our study.
- **SDX Match.** The SSNs of all clients in our research sample.

²We do not have data on the receipt of AFDC prior to July or receipt of food stamps in April. Hence, we counted all applicants who did not receive food stamps in the past three months and clients who applied in July and did not receive food stamps in either May or June. Thus, we slightly overestimated the number of SSNs that could have been matched.

- **IRS Match.** The SSNs of all clients in our second research sample who applied before the last IRS request tape was produced. A client who applied more than once was counted each time he or she applied.

We also adjusted our estimates of the numbers of SSNs sent (eligible) to be matched to account for the subsequent loss of data on some SSNs targeted for follow up. We could not include in our cost-effectiveness ratio costs or savings resulting from follow up of targeted SSNs in cases that transferred to offices outside our study sample or for which data collection forms were not returned. For consistency, we adjusted our estimates of data processing costs to reflect this attrition, using as an adjustment factor the ratio of the number of follow ups for which we had outcome data to the total number of follow ups. This adjustment factor was 0.949 in Arizona and 0.728 in Michigan.

c. Payments to Other Agencies

All state agencies pay the IRS one cent per match inquiry for data processing that occurs at the agency. Michigan's DSS also pays its SWICA (MESC) for state wage data. The MESC charges are based on the cost of maintaining the database (collecting and inputting data from employers) and on the proportion of MESC data use that is attributable to IEVS matching over the course of a year. To calculate the cost per inquiry, we assumed (1) that total MESC costs (primarily, the cost of collecting and inputting data from employers) is fixed and that other use of MESC data would also remain constant over the year, and (2) that the number of DSS's data requests would decrease by the estimated number of applicants sent to be matched over the course of a year.

The total annual cost of maintaining the MESC database in fiscal year 1992 was \$1,891,862.22, of which \$1,610,920.68 (85.15 percent) was billed to DSS. During the fourth quarter of the fiscal year, DSS sent 1,036,064 SSNs to be matched: 127,993 applicants and 908,071 recipients. In the absence of match data for earlier part of the year, we assumed that approximately the same number of SSNs were sent to be matched during each of the three previous quarters. Hence, we estimated

that over the course of the year, DSS submitted 4,144,256 match requests (for 511,972 applicants and 3,632,284 recipients).

We assumed that MESC determines usage for billing purposes on the basis of the number of matches requested. Given that DSS's 4,144,256 requests constituted 85.15 percent of usage, we estimated that the total number of requests was 4,867,006, and that MESC itself requested 722,750 matches (14.85 percent of the total.) Since the cost of gathering and inputting employer data far exceeds the cost of accessing the information, we assumed that MESC expenditures are fixed and do not vary with the number of match requests. Thus, all that varies is the portion of the total cost that can be attributed to DSS. If both applicants and recipients are matched, MESC expenditures billed to DSS are \$1,610,920.68 (the amount actually billed). If only recipients are matched, the number of DSS requests decreases by 511,972 to 3,632,284. The total number of requests decreases to 4,355,034. The portion of MESC expenditures that are attributable to DSS decreases from 85.15 to 83.40 percent, or from \$1,610,920.68 to \$1,577,813.10 (assuming, as noted, that the total cost of \$1,891,862.22 is fixed). Thus, we estimated that MESC charges are \$33,107.58 higher with the applicant match than without it. The cost for each of the estimated 511,972 SSNs sent to be matched is therefore 6.5 cents.

D. DEVELOPMENT COSTS

Development costs are the costs of developing and implementing new targeting strategies. These costs fall into two categories: management and data processing. We assume that management costs are essentially zero. Agency staff in both states report that training and materials costs were negligible and that senior management time devoted to developing and implementing new targeting strategies was similarly limited.

Data processing costs are of two types: programmer labor costs and mainframe computing costs associated with test runs. In Arizona, these costs include the costs of updating matching programs. This was necessary to bring programs in line with system upgrades installed either at FAA or at

source agencies since these matches were last run or hits last followed up. To calculate labor costs, we multiplied programmer hours spent upgrading matching programs and programming new targeting strategies by these individuals' fully loaded hourly wage rates (using the same loading factor we used for caseworker labor).

The FAA employee in charge of overseeing programming efforts for the new IEVS matches spent a total of 501 hours supervising the three programmers. We assumed that she spent an equal amount of time (167 hours) on each of the three new matches: SWICA, BEER, and IRS. The annual salary of this employee was \$23,703. Assuming 2,080 paid hours per year, this employee's straight hourly rate was \$11.40. Thus, salary costs of her supervisory activities were \$1,903.80 for each of the three matches.

The actual programming time for the three matches varied: 521.5 hours for SWICA, 317.5 hours for BEER, and 271 hours for IRS. Each of the programmers' annual salary was \$31,000. Assuming 2,080 paid hours, their hourly rates were \$14.90. Thus, the salary costs for programming the three matches were \$7,770.35 for SWICA, \$4,730.75, for BEER, and \$4,037.90 for IRS.

Total salary costs for the matches were therefore \$9,674.14 for SWICA, \$6,634.55 for BEER, and \$5,941.70 for IRS. To these salary costs, we applied the loading factor used in calculating the fully loaded hourly rate for caseworkers. This loading factor was calculated by dividing the estimated fully loaded hourly rate for Arizona caseworkers (\$39.07) by caseworkers' base hourly rate (\$8.91). The base hourly rate was obtained by dividing Arizona caseworkers' average annual salary of \$18,536 by 2,080 paid hours per year. This calculation yielded a loading factor of 4.38. Applying this loading factor to salary costs associated with developing the three matches, we obtained the following development costs: \$42,372.78 for SWICA, \$29,059.33 for BEER, and \$26,024.65 for IRS.

We assumed that the cost of test runs was the difference between the total cost of all processing done under the relevant IEVS job numbers between July and November and the cost of actual matches conducted during the period. The total cost of computer resources utilized for SWICA-

related processing was \$12,878.74. We estimated that the cost of actual matches over the period was \$7,074.96. We assumed that test runs accounted for the difference of \$5,803.79. The total cost of BEER-related processing from July to November was \$1,333.73. The estimated cost of actual matches was \$954. We assumed that test runs accounted for the difference of \$379.73. The total cost of processing for the IRS match was \$441.04. We estimated the cost of actual matches at \$101.37. The estimated cost of test runs is therefore \$339.67.

Estimated total development costs in Arizona were therefore \$48,176.57 for the SWICA match, \$29,439.06 for the BEER match, and \$26,364.32 for the IRS match.

In Michigan, data processing development costs were limited to the cost of changing a few lines of code in the IRS targeting algorithm. We assumed this cost was negligible.

REFERENCES